Transactions on Quantitative Finance and Beyond

www.tqfb.reapress.com

Trans. Quant. Fin. Bey. Vol. 1, No. 2 (2024) 195–202.

Paper Type: Original Article

Modeling the Relationship Between Job Satisfaction and HSE Performance of Pars Oil and Gas Company Employees Using Multiple Linear Regression

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Citation:

Received: 11 July 2024 *Revised: 06 August 2024* *Accepted: 10 October 2024*	Bahrkazemi, S., & Soltani, H. (2024). Modeling the relationship between job satisfaction and HSE performance of Pars Oil and Gas Company employees using multiple linear regression. *Transactions on quantitative finance and beyond, 1* (2), 195-202.

Abstract

Management is an effective and goal-oriented process that guides an organization. This guidance involves five sequential functions: planning, organizing, leading, coordinating, and controlling and evaluating. The fundamental knowledge of management, or the management process, has been present even in ancient civilizations such as those of the Iranians, Egyptians, Sumerians, and others. In Islamic civilization, we have had grand and civilizational management systems. Today, the successful implementation of an HSE (Health, Safety, and Environment) management system depends on the participation of all employees. Given that job satisfaction can influence employee performance, this study aims to model the relationship between job satisfaction and the HSE performance of Pars Oil and Gas Company employees. The statistical population of this research consists of all employees of Pars Oil and Gas Company (N = 5300). Using Cochran's formula and simple random sampling, 360 employees were selected as the sample. The data collection tool was a questionnaire, and to ensure its validity, the opinions of several university faculty members were used. Cronbach's alpha coefficient was applied to confirm the reliability, yielding values of 0.79 for job satisfaction and 0.83 for HSE performance. The results indicate a positive and significant relationship between job satisfaction and HSE performance (P-value < 0.01). The regression results show that, in two steps, the indices of job nature and security and safety, which had the highest impact on HSE performance, were included in the analysis. In the first step, the job nature index explains 59% of the variance in the response variable (HSE performance), and in the second step, with the inclusion of the security and safety index, this figure increases to 63%.

Keywords: Job satisfaction, Multiple linear regression, HSE performance.

1 | Introduction

Skilled and efficient human resources are undoubtedly one of the most important and effective tools for achieving organizational goals and play a significant role in increasing organizational productivity [1]. In recent years, considerable attention has been given to the potential relationship between employee characteristics

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and organizational outcomes [2]. Understanding social awareness, perspectives, and behaviors is crucial in guiding society towards higher social values, with the work and relationship between human resources and organizational performance being central to this effort [3]. Job satisfaction is a behavioral phenomenon that results from an individual's overall attitude towards their job. It can be seen as the outcome of positive or negative beliefs that employees hold about various aspects of their work [4]. Job satisfaction is considered a psychological factor and can be viewed as a form of emotional alignment with one's job and employment conditions. In other words, if the job provides the desired enjoyment, the individual is satisfied; otherwise, they may seek to change their job [5].

There are various theories concerning job satisfaction, highlighting its multidimensional nature and its connection to multiple factors. Some of these factors include job conditions, salary levels, opportunities for promotion, relationships with colleagues, and supervisory methods [6]. Herzberg's two-factor theory (motivational-hygiene) is one of the most comprehensive motivational theories, classifying influencing factors into two categories: motivational and hygiene. According to Herzberg, hygiene factors eliminate dissatisfaction, while motivational factors increase job motivation [7]. In today's competitive world, many organizations have realized the importance of HSE (Health, Safety, and Environment) management, considering it as integral as other management aspects within the organization [8]. Preventing health, safety, and environmental incidents to enhance productivity while ensuring the health and safety of human resources requires an effective HSE management system [9]. The HSE management system aims to prevent health, safety, and environmental incidents by ensuring the health and safety of employees and those affected by organizational activities. It also aims to achieve sustainable development, reduce costs, and increase productivity [10].

Various threats and hazards have resulted in many employees in industrial environments losing their lives or suffering from poisoning and disabilities due to work-related incidents. The oil and gas industry is no exception, constantly facing increasing risks that endanger employees exposed to these hazards [11]. According to research, accidents in oil and gas facilities in developing countries are significantly more costly and irreparable in terms of human and infrastructural losses than similar incidents in developed countries [12]. Hence, adherence to HSE management system requirements is one of the key factors in improving productivity in this critical industry. However, it should be noted that the successful implementation of this management system depends on the participation of all employees in adhering to health, safety, and environmental requirements i.e., high HSE performance among employees in the oil and gas industry. Research shows that employees who are fully satisfied with their jobs are less likely to file complaints, have better physical and mental health, enjoy longer life expectancy, learn new tasks related to their jobs more quickly, and experience fewer work-related incidents [13].

Several studies, both domestic and international, have examined the relationship between job satisfaction and HSE performance. Mardani et al. [14] explored the relationship between job satisfaction and HSE performance among human resources in the mold-making industry, finding a positive and significant relationship between employee HSE performance and job satisfaction at the 5% error level. Sembe and Ayuo [15] investigated the impact of selected occupational health and safety management methods on employee job satisfaction in university campuses in Nakuru, Kenya. Their multiple linear regression results indicated that different occupational health and safety management methods had a significant impact on employee job satisfaction, with the variables of emergency procedures and workplace environment being significant at a 95% confidence level. Branch [16] studied the relationship between job satisfaction and HSE performance in a pharmaceutical company, concluding that there was a positive and significant relationship between job satisfaction and HSE performance. Regression analysis revealed that job nature and success had the greatest influence on HSE performance.

Perera [17] examined the role of job satisfaction in mediating the relationship between occupational health and safety and job performance, finding that job satisfaction significantly mediates the relationship between occupational health and safety and job performance.

Given the importance of the subject, this study aims to model the relationship between job satisfaction and HSE performance among employees of Pars Oil and Gas Company using multiple linear regression, contributing in some small way to enhancing organizational performance in this industry.

2 | Methodology

This study is applied in nature, survey-based in terms of data collection, and descriptive-correlational in terms of data analysis. The research aims to model the relationship between job satisfaction and the HSE performance of Pars Oil and Gas Company employees using multiple linear regression conducted in 2021. The statistical population includes all employees of Pars Oil and Gas Company (N = 5300), and based on Cochran's formula and simple random sampling, 360 employees were selected as the research sample.

The data collection tool was a questionnaire. For the job satisfaction section, the standard Dant questionnaire, based on Herzberg's two-factor theory, was used, which includes 36 items across 10 indicators. For the HSE performance section, the Mardani et al. [14] questionnaire was employed, which consists of 21 items across 6 indicators.

The questionnaire used a 5-point Likert scale, and to quantify the qualitative data for analysis in the model, a triangular fuzzy scale was used. Each qualitative option was represented by a triangular fuzzy number in the form of (m, α, β), where m represents the mean, and α and β represent the right and left tolerances, respectively. The scale included five options: very low, low, medium, high, and very high, which were assigned the following fuzzy values: 0.190, 0.345, 0.5, 0.655, and 0.81, respectively. These values were then used in the modeling process.

To ensure the content validity of the questionnaire, feedback was obtained from five university faculty members who were experts in the research subject. The reliability of the questionnaire was confirmed by conducting a pilot test with 30 employees, and Cronbach's alpha coefficient was calculated. The alpha values for the job satisfaction section and HSE performance section were 0.79 and 0.83, respectively. Data were analyzed using SPSS software, version 19.

3 | Findings

The personal and professional characteristics of the respondents revealed that 70.3% were male and 29.7% were female. In terms of marital status, 23.4% were single, and 76.6% were married, with more than half of them being between the ages of 41 and 50. The educational level of the majority of respondents (64.1%) was a master's degree or higher, and most of them (42.2%) had between 15 to 25 years of work experience. Regarding employment status, most of the employees surveyed (82.8%) were formally employed.

The employee job satisfaction variable in the studied company was evaluated using 10 indicators with 36 items (*Table 1*). According to the results shown in *Table 1*, the indicators of 1) salary and wages, 2) appreciation and promotion, 3) technical management, 4) provision and safety, 5) policies and working conditions, 6) human relations management, 7) nature of work, 8) achievement, 9) satisfaction with colleagues, and 10) responsibility were ranked from lowest to highest, respectively.

Furthermore, the HSE (Health, Safety, and Environment) performance variable of the employees in the company was assessed using 6 indicators with 21 items (*Table 2*). According to the results shown in *Table 2*, the indicators of 1) reporting, 2) preparedness and response in emergency situations, 3) training, 4) commitment and participation, 5) communication, and 6) performance and execution were ranked from lowest to highest, respectively.

Table 1. Mean and standard deviation of employee job satisfaction variable items.

Indicator	Item	Mean	Standard Deviation
Salary and wages	My salary is higher than similar jobs in other organizations.	0.49	0.14
	I am satisfied with the amount of salary for the work I do.	0.51	0.14
	My salary meets my living needs.	0.48	0.14
Appreciation and promotion	My colleagues say I do my job well.	0.64	0.11
	I am encouraged to do my work well.	0.46	0.17
	My career advancement in terms of promotion is satisfactory.	0.49	0.15
	I am appreciated for my work.	0.46	0.15
	Overall, I feel a sense of progress in my job.	0.51	0.17
Technical management	My manager presents themselves as a competent person.	0.58	0.16
	My manager is a good manager.	0.50	0.17
	I am satisfied with my manager.	0.49	0.18
Responsibility	I am responsible for my work.	0.68	0.13
	I have a lot of responsibility in my job.	0.67	0.11
	I enjoy the sense of responsibility in my job.	0.65	0.13
	I have significant decision-making power in my job.	0.60	0.13
Satisfaction with colleagues	I am fond of my colleagues.	0.63	0.14
	The people I work with cooperate with me a lot.	0.63	0.09
Achievement	I successfully complete difficult tasks.	0.66	0.10
	I feel that I do my job successfully.	0.67	0.09
	I am satisfied with how well I do my job.	0.69	0.10
	I feel that I am progressing in this organization.	0.57	0.18
	There is an opportunity for advancement in my job.	0.54	0.18
Nature of work	My job is very interesting.	0.60	0.14
	I enjoy the type of work I do.	0.61	0.16
	My tasks motivate me to put in effort.	0.61	0.14
Provision and safety	This organization offers permanent (full-time) employment.	0.50	0.20
	I always feel secure in my job.	0.60	0.16
Human relations management	I have a good relationship with my colleagues.	0.67	0.12
	My manager listens to my suggestions with interest.	0.55	0.17
	I feel that my manager and I understand each other.	0.54	0.17
	My manager supports me.	0.53	0.17
Policies, rules, and working conditions	I am satisfied with the physical conditions of my work environment.	0.57	0.14
	The organization's personnel policies are appropriate.	0.55	0.15
	My work environment is pleasant.	0.56	0.16
	Working conditions compared to other jobs are satisfactory.	0.59	0.15
	The personnel policies of this organization are clear.	0.58	0.17

Table 2. Mean and standard deviation of hse performance items.

Indicator	Item	Mean	Standard Deviation
Reporting	How often do you report unsafe behaviors and conditions at your workplace?	0.58	0.19
	How often do you report near-misses and minor incidents to the HSE unit?	0.56	0.18
Commitment and participation	To what extent do you comply with the relevant requirements and instructions at work?	0.66	0.12
	How proactive are you in preventing unsafe, unhealthy, and environmentally damaging incidents?	0.66	0.14
	How actively do you participate in HSE-related activities and programs?	0.61	0.16
	How actively do you follow up on your periodic medical examinations?	0.65	0.15
	To what extent do you offer suggestions and innovative ideas to improve HSE?	0.57	0.20
Emergency preparedness	How well do you know your duties in emergency response programs?	0.61	0.18
	How actively do you participate in organizational-wide emergency drills?	0.58	0.20

Table 2. Continued.

Indicator	Item	Mean	Standard Deviation
Training	To what extent do you apply the training provided while performing your tasks?	0.64	0.17
	Do you express your training needs related to HSE?	0.59	0.17
	To what extent do you participate in hazard identification, risk assessment, and control measures?	0.60	0.18
Communication	How familiar are you with safety signs, labels, and warnings on machinery?	0.65	0.13
	How familiar are you with the consequences of not adhering to safety protocols?	0.66	0.13
	How much attention do you pay to posters, films, and publications related to HSE?	0.65	0.13
	How often do you discuss work hazards and procedures with your colleagues?	0.61	0.16
Performance and implementation	To what extent do you adhere to personal hygiene practices?	0.71	0.09
	How well do you follow order and discipline in the workplace?	0.72	0.10
	How often do you use personal protective equipment at work?	0.68	0.12
	How actively do you try to conserve energy (electricity, gas, etc.) in the workplace?	0.71	0.10
	How actively do you try to use materials (paper, plastic, raw materials) efficiently in the workplace?	0.71	0.10

Table 3. Correlation between HSE performance and job satisfaction indicators.

Indicator	Pearson Correlation Coefficient	P-Value
Salary and wages	0.130	0.306
Appreciation and promotion	0.353	0.004
Technical management	0.049	0.699
Responsibility	0.134	0.290
Satisfaction with colleagues	0.133	0.294
Achievement	0.390	0.001
Nature of work	0.590	0.000
Provision and safety	0.494	0.000
Human relations management	0.414	0.001
Policies and working conditions	0.429	0.000
Overall job satisfaction	0.465	0.000

Table 4. Pearson correlation between job satisfaction and hse performance indicator.

Job Satisfaction Indicator	Overall HSE Performance	Reporting	Commitment & Participation	Emergency Preparedness	Training	Communication	Performance & Implementation
Salary and wages		0.112	0.067	0.093	0.076	0.180	0.201
Appreciation and promotion		0.245*	0.283*	0.352	0.275*	0.391	0.315*
Technical management		0.048	0.058	-0.003	-0.001	0.065	0.159
Responsibility		0.120	0.178	0.150	0.069	0.029	0.169
Satisfaction with colleagues		-0.063	0.237	0.053	0.125	0.140	0.380*
Achievement		0.275*	0.355	0.434	0.323	0.276*	0.378
Nature of work		0.501	0.603	0.578	0.568	0.458	0.262*
Provision and safety		0.478	0.449	0.483	0.440	0.429	0.186
Human relations management		0.295*	0.399	0.343	0.355	0.434	0.385
Policies and working conditions		0.364	0.361	0.360	0.373	0.360	0.470

*Significant at 95% confidence level.
Significant at 99% confidence level.

Regression models

Model 1: Y=0.269+0.587XY = 0.269 + 0.587 XY=0.269+0.587X.

Model 2: Y=0.234+0.454X1+0.212X2Y = 0.234 + 0.454 X_1 + 0.212 X_2Y=0.234+0.454X1+0.212X2.

Table 5. Variables and correlation coefficients.

Adjusted R^2	R^2	Correlation Coefficient	Independent Variable	Step
0.338	0.348	0.590	Nature of work	First
0.376	0.396	0.630	Provision and safety	Second

Table 6. Impact of independent variables on HSE performance.

Model Step	Independent Variable	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (Beta)	t-Statistic	P-Value
Model 1	Constant	0.269	0.063	-	4.259	0.000
	Nature of work	0.587	0.102	0.590	5.757	0.000
Model 2	Constant	0.234	0.063	-	3.690	0.000
	Nature of work	0.454	0.116	0.457	3.920	0.000
	Provision and safety	0.212	0.096	0.256	2.201	0.032

4 | Conclusion

This study focused on modeling the relationship between job satisfaction and employees' HSE (Health, Safety, and Environment) performance using multiple linear regression with the stepwise method. The analysis of the job satisfaction variable showed that responsibility and satisfaction with colleagues ranked the highest. This indicates that the employees of the company demonstrate a high level of responsibility, and most of them are sufficiently satisfied with their colleagues. Mardani et al. [14] also found that responsibility and satisfaction with colleagues held the highest rank, while the lowest rank was attributed to the provision and safety index. Similarly, in Khodayari Fard's [18] study, satisfaction with colleagues had the highest rank.

The indices of responsibility and satisfaction with colleagues are critical across various industries and sectors, including the Pars Oil and Gas Company. To further enhance employee satisfaction, the company can focus more on these two indices. For instance, job rotation and regular employee surveys could be utilized to maximize satisfaction with colleagues. In this study, the salary and wage index received the lowest rank, indicating that the company's employees do not find their wages sufficient, which undoubtedly leads to job dissatisfaction. Shokri et al. [19] found a significant negative relationship between employees' wages and job satisfaction at the 1% error level. Kameli et al. [20] also stated that there is a significant positive relationship between wages and employee efficiency at an error level of less than 5%. Therefore, it can be confidently concluded that the wages of the company's employees can influence their job satisfaction.

The ranking of job satisfaction indices in this and other studies suggests that satisfaction in different contexts depends on specific environmental factors related to the job domain. This emphasizes the need to study this significant psychological phenomenon under different working conditions and examine the influencing factors.

The analysis of the HSE performance of the company's employees revealed that the performance and execution index ranked the highest, while the reporting index had the lowest rank. The lack of attention to reporting could lead to negative consequences. Therefore, employees must be educated and obligated to understand the importance of reporting and following operational guidelines. Reporting unsafe behaviors and conditions in the workplace or reporting near-miss incidents to the HSE unit can help prevent major accidents. Today, accidents in oil and gas facilities in developing countries tend to be far more costly and irreparable than similar incidents in developed countries [12]. Thus, focusing on the reporting index could prevent many of these accidents.

Another part of the study's results indicates that there is a significant positive relationship at the 1% error level between job satisfaction indices, including: 1) achievement, 2) nature of the job, 3) provision and safety, 4) management of human relations, and 5) policies, rules, and working conditions with employees' HSE

performance. Additionally, a positive and significant relationship at the 1% error level exists between overall job satisfaction and HSE performance, consistent with the findings of Kerr et al. [21].

The regression model results indicate that in two steps, the nature of the job and provision and safety indices, which have the highest impact on employees' HSE performance, entered the analysis. The correlation table between job satisfaction and HSE performance indices also shows that these two indices have a significant positive relationship at the 1% error level with almost all HSE performance indices (except for the relationship between provision and safety with performance and execution, which is not significant). Branch [16] conducted a study on the relationship between job satisfaction and HSE performance in a pharmaceutical company and found that the nature of the job has a greater impact on employees' HSE performance than other variables. In Tahavori's [22] study, job security was identified as one of the most important aspects of work. It was argued that as long as employees are uncertain about their job security, such as insurance and retirement, they will experience stress and anxiety, reducing their overall performance.

In this study, the regression results also show that in the first model, the nature of the job index explains 59% of the variance in the response variable (employees' HSE performance). In the second model, with the addition of the provision and safety index, this number increases to 63%. Based on these results, it can be concluded that the company's managers and decision-makers should focus specifically on these two indices to improve employee job satisfaction.

Author Contributions

Samira Bahrkazemi conceptualized the research, conducted the primary data collection, and performed the initial analysis. Hamidreza Soltani contributed to the research methodology, supervised the statistical modeling process using multiple linear regression, and critically revised the manuscript. Both authors reviewed and approved the final version of the paper.

Funding

This research received no specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data Availability

The data supporting the findings of this study were collected from Pars Oil and Gas Company employees and are not publicly available due to confidentiality agreements. However, anonymized data can be provided upon reasonable request to the corresponding author.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this study.

References

[1] Alassaf, D., Dabić, M., Shifrer, D., & Daim, T. (2020). The impact of open-border organization culture and employees' knowledge, attitudes, and rewards with regards to open innovation: an empirical study. *Journal of knowledge management*, *24*(9), 2273–2297. DOI:10.1108/JKM-02-2020-0122

[2] Rubenstein, A. L., Zhang, Y., Ma, K., Morrison, H. M., & Jorgensen, D. F. (2019). Trait expression through perceived job characteristics: a meta-analytic path model linking personality and job attitudes. *Journal of vocational behavior*, *112*, 141–157. DOI:10.1016/j.jvb.2019.02.002

[3] Iserman, R., Lunov, V., & Mintz, A. (2021). *Innovations in applied occupational psychology: the challenges of our time*. Ottawa: Accent Graphics Communications & Publishing. Glasgow: Society for the support of publishing initiatives and scientific mobility Limited. https://www.researchgate.net/profile/Vitalii-Lunov/publication/358279115_Innovations_in_applied_occupational_psychology_the_challenges_of_our_time

[4] Yohannes, M. E., & Wasonga, T. A. (2023). Leadership styles and teacher job satisfaction in Ethiopian schools. *Educational management administration and leadership*, *51*(5), 1200–1218. DOI:10.1177/17411432211041625

[5] Steptoe-Warren, G. (2013). *Occupational psychology: an applied approach*. Pearson Education. https://pureportal.coventry.ac.uk/en/publications/occupational-psychology-an-applied-approach

[6] Steg, L., Keizer, K., Buunk, A. P., & Rothengatter, T. (2017). *Applied social psychology*. Cambridge University Press.

[7] Alrawahi, S., Sellgren, S. F., Altouby, S., Alwahaibi, N., & Brommels, M. (2020). The application of Herzberg's two-factor theory of motivation to job satisfaction in clinical laboratories in Omani hospitals. *Heliyon*, *6*(9). DOI:10.1016/j.heliyon.2020.e04829

[8] Hughes, P., & Ferrett, E. (2011). *Introduction to health and safety at work*. Routledge. https://doi.org/10.4324/9780080970714

[9] Watterson, A., & LaDou, J. (2003). Health and safety executive inspection of UK semiconductor manufacturers. *International journal of occupational and environmental health*, *9*(4), 392–396. https://www.tandfonline.com/doi/abs/10.1179/oeh.2003.9.4.392

[10] Harris, J. R., & Current, R. S. (2012). Machine safety - new and updated consensus standards. *Professional safety*, *57*(5), 50–57. www.assp.org

[11] Abaspour, M., Nasiri, P., Dana, T., & Toutounchian, S. (2009). Investigation of risks and HSE risk assessment of the phases of construction to production of oil and gas industry projects (case study of Petropars company). *Journal of environmental science and technology*, *11*(3), 1-13. (**In Persian**). https://www.sid.ir/paper/87234/fa

[12] Van Rooy, D. L., & Viswesvaran, C. (2004). Emotional intelligence: a meta-analytic investigation of predictive validity and nomological net. *Journal of vocational behavior*, *65*(1), 71–95.

[13] Razak, A., Sarpan, S., & Ramlan, R. (2018). Influence of promotion and job satisfaction on employee performance. *Journal of accounting, business and finance research*, *3*(1), 18–27. DOI:10.20448/2002.31.18.27

[14] Mardani, S., Nasiripour, A. A., Maram, H. N., Behzadi, M. H., & Mardani, N. (2014). The relationship between job satisfaction and hse performance of employees in a molding industry. *Iran occupational health*, *10*(6), 91–102. https://www.cabidigitallibrary.org/doi/full/10.5555/20143236653

[15] Sembe, F. (2017). Effect of selected occupational health and safety management practices on job satisfaction of employees in university campuses in Nakuru Town, Kenya. *Journal of human resource management*, *5*(5), 70–77. DOI:10.11648/j.jhrm.20170505.11

[16] Branch, T. N. (2018). Investigation of the relation between job satisfaction and HSE performance of the staff at the Mehr Darou pharmaceutical company. *Journal of occupational and environmental health*, *3*(4), 265–274.

[17] Perera, G. D. N. (2019). Occupational health and safety practice and job performance: role of job satisfaction. *Sri lankan journal of human resource management*, *9*(1), 1–10. http://journals.sjp.ac.lk/index.php/sljhrm/article/view/4371

[18] Khodayari Fard, M. (2010). Assesment of employees job satisfaction, and customer satisfaction in Bank Saderat Iran. *Journal of psychological achievements (educational sciences and psychology)*, *4*(2), 1-18. (**In Persian**). https://psychac.scu.ac.ir/article_11677_ee18bfb0e5e384e2dd7e758a06ea38b8.pdf

[19] Shokri, B., Sarikhani, N., & Hasoomi, T. (2012). Factors affecting the job satisfaction of employees of Islamic Azad University, Roudhen branch. *Journal of social research*, *5*(14), 119-135. (**In Persian**). https://www.sid.ir/paper/164822/fa

[20] Kameli, M. J., Darabi, R., Jafari, M., & Namjougarami, M. (2011). Investigating the role of salary management system on the efficiency of Naja headquarters staff. *Journal of development of management and human resources and support*, *6*(20), 41-69. (**In Persian**). https://www.sid.ir/paper/202110/fa

[21] Kerr, R., McHugh, M., & McCrory, M. (2009). HSE management standards and stress-related work outcomes. *Occupational medicine*, *59*(8), 574–579. DOI:10.1093/occmed/kqp146

[22] Tahavori, Z. (2005). Job satisfaction among the staff surveying employed at data processing section of the national library of Iran. *Iranian journal of information processing and management*, *21*(2), 25-46. (**In Persian**).